

REMARKS/ARGUMENTS

This Response and Amendment responds to the Office Action dated April 7, 2005. Claims 11-16, 18, 19, 21-24, 28 and 35-38 are pending in the present application. Claims 11-16, 18-19 and 28 stand rejected. Claims 21-24 and 35-38 are withdrawn from consideration. No amendments are made by this response. Entry of this response is requested.

With Respect to the Rejections Under 35 U.S.C. § 102(e), Paragraphs 10-11 of the Office Action:

Claims 11-16, 19, and 28 are rejected under 35 U.S.C. § 102(e) as being anticipated by United States Patent 6,037,186 to Stimpson. Claim 11 is the only independent claim in this group. Claim 11 reads (emphasis added):

A method of producing high density arrays of target substances comprising sectioning a bundle of target-strands that has been stabilized by **EMBEDDING** the bundle in a matrix;
where the target-strands comprise the target substances;
where the location of each target substance within the bundle is noted in a database; and,
where the sectioning results in a high density array.

The term “embedded” or “embedding” occurs at the following places in the present application as filed (emphasis added):

For example, stabilization can be accomplished by **embedding** the bundle of target-strands in a matrix, such as epoxy, polypropylene or polystyrene. [page 8, lines 15-16]

The bundle of fibers is preferably stabilized by **embedding** or otherwise impregnating the bundle in a matrix to provide structural support to the bundle. [page 10, lines 2-4]

Alternately, the tubes can be filled with the target substances with or without **embedding** the target substances in a matrix. [page 12, lines 10-12]

The bundle of tubes is preferably stabilized by **embedding** the bundle in a matrix to provide structural support to the bundle. [page 12, lines 16-17]

The bundle of threads is stabilized by **embedding** it in a matrix such as polymethacrylate, epoxy resins, polyethylene glycol, paraffin waxes, gums, poly acrylamide and other similar materials which can, preferably, be handled in liquid form at elevated temperature or in unpolymerized form suitable for embedding the threads. The embedded threads are allowed to harden or to crosslink to impart a rigid structure to the bundle. [page 14, lines 15-20]

In a preferred embodiment, the threads are prevented from becoming fully impregnated with **embedding** matrix and sequestering the immobilized DNA by coating the threads with a substance such as gelatin, sucrose or polyvinyl alcohol, to which the matrix is impermeant. This is accomplished by wetting the threads bearing the fixed, immobilized DNA in a solution containing from about 0.01% to about 10% by weight of the substance and allowing the threads to dry before being embedded in the matrix. [page 14, lines 21-26]

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Each cylinder was immersed into a plastic bulb 1.25 cm by 7.5 cm filled with unpolymerized LR White™ soft **embedding** media (Sigma) prepared according to the manufacturer's instructions until the cylinder became fully impregnated by the media. Each cylinder was then placed at the base of the media filled bulb, centered and allowed to polymerize overnight at 60°C. Each bulb containing an **embedded** cylinder was removed and placed at ambient temperature and polymerization was observed to be complete. [page 21, lines 6-12]

Referring now to Figures 1 to 3, there are shown respectively, target-strands 10 comprising a series of coated fibers 12 impregnated with known target substances; the target-strands 10 **embedded** in a matrix 14 and assembled into a bundle 16; and the bundle 16 being sectioned to produce a plurality of identical high density arrays 18, where each array has target substances in two analytical axes.

Referring now to Figures 12 to 14, there are shown respectively, target-strands 44 comprising a series of tubes 46 filled with known target substances 48; the target-strands 44 **embedded** in a matrix 50 and assembled into a bundle 52; and the bundle 52 being sectioned to produce high density arrays 54, where each array has target substances 48 arranged in two analytical axes.

The term “embedded” is used in its ordinary sense in the biological fields of which the presently claimed subject matter is a part. The Applicant does not believe that any reference outside of the present specification is necessary to understand the meaning of the term, however, the Patent and Trademark Office has now resorted to using a dictionary definition in support of its rejection. Therefore, the Applicant believes that it is necessary to respond to the rejection in the same manner.

The dictionary relied upon by the Patent and Trademark Office is not a technical dictionary in the biological arts. The Applicant respectfully asserts that any reliance on a dictionary outside of the art for rejecting the present invention is, in and of itself, improper. Thus, the Applicant provides the following definitions of “embed” found in dictionaries of the biological sciences, and has provided copies of the covers, title pages and pages containing the definitions (emphasis in original):

Langenscheidt's Pocket Merriam-Webster Medical Dictionary:
embed - vb embedded; embedding : to prepare (a microscopy specimen) for sectioning by infiltrating with and enclosing in a supporting substance – embedment

Oxford Dictionary of Biology:
embedding: A stage in the preparation of a sample for examination by microscopy that involves impregnation of the

sample with wax or plastic following dehydration. The embedded sample can then be cut into extremely thin sections to reveal cellular and subcellular structure.

Merriam-Webster's Medical Desk Dictionary-Rev. Ed.:
embed also embed - vt embedded also imbedded; embedding also imbedding : to prepare (a microscopy specimen) for sectioning by infiltrating with and enclosing in a supporting substance –
embedment

The Bantam Medical Dictionary-Fifth Ed.:
embedding n. (in microscopy) the fixing of a specimen within a mass of firm material in order to facilitate the cutting of thin sections for microscopical study. The embedding medium, e.g. paraffin for light microscopy or Araldite for electron microscopy, helps to keep the specimen intact.

The Penguin Dictionary of Biology-Eleventh Ed.
embedding: Method employed in the preparation of permanent microscope slides of thin tissue sections. After DEHYDRATION and CLEARING, the material is put into molten paraffin wax (usually for 1-3 hours, with one or two changes of wax) which impregnates the tissue. After setting, the wax block is sectioned using a MICROTOME. The wax is removed by xylene, itself removed by absolute alcohol, and gradual rehydration of the section is achieved by passing for a few minutes through progressively more dilute alcohols. Staining can then proceed. In electron microscopy, Araldite® is frequently used for the embedding.

Further, as cited above, Figure 2 and Figure 3 show “the target-strands 10 **embedded** in a matrix 14,” and Figure 13 and Figure 14 show “the target-strands 44 **embedded** in a matrix 50.” The term “embedding” is used throughout the present specification including being depicted in the Figures, consistent with all of the dictionary definitions above. The Patent and Trademark Office has not cited any passage in United States Patent 6,037,186 to Stimpson that anticipates “sectioning a bundle of target-strands that has been stabilized by **EMBEDDING** the

bundle in a matrix” as claimed in pending claim 11. The remaining claims are dependent on claim 11. Therefore, withdrawal of this rejection is hereby requested.

With Respect to the Rejections Under 35 U.S.C. § 103, Paragraphs 12-13 of the Office Action:

Claims 11-16, 18, 19, and 28 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over United States Patent 6,037,186 to Stimpson and United States Patent 4,084,308 to Runge for the reasons indicated in paragraphs 12-13 of the Office Action. The Applicant requests that this rejection be reconsidered in view of the arguments given above.

With Respect to the Withdrawal of Claims 21-24 and 35-38:

Claims 21-24 stand previously withdrawn as being drawn to a nonelected species. Claims 35-38 are indicated as also withdrawn to a nonelected species for the reason given in paragraph 8 of the Office Action.

As claims 21-24 and 35-38 depend upon claim 11, and claim 11 is now believed to be in condition for allowance for the reasons indicated above, rejoinder of claims 21-24 and 35-38 is hereby requested. If, however, the United States Patent and Trademark Office still considers claims 21-24 and 35-38 not to be allowable even in view of their dependency upon claim 11, the Applicant authorizes the United States Patent and Trademark Office to cancel claims 21-24 and 35-38 by Examiner's Amendment, if necessary to place the application otherwise in condition for allowance.

CONCLUSION

Claims 11-16, 18-19 and 28 are now believed to be in condition for allowance for the reasons stated above and a Notice of Allowance is earnestly solicited. Additionally, the Applicant requests reconsideration of the withdrawal of claims 21-24 and claims 35-38. If, however, there remain any issues that can be resolved by telephone with the Applicant's representative, the Examiner is encouraged to contact the undersigned directly.

If any extension of time is required, such extension is hereby requested. The Commissioner is hereby authorized to charge payment of any fees associated with this communication, including all extension fees, to Deposit Account No. 19-2090.

Respectfully submitted,

SHELDON & MAK PC

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By: _____



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